CLAIMS

What is claimed is:

- 1 1. A surface metrology device, comprising:
- a metrology unit receiving information from a measurement region of a surface; and
- a first imaging camera with a first field-of-view containing the measurement region.
- 1 2 A semiconductor processing device, comprising;
- 2 a wafer process station; and
- a metrology station apart from but coupled to the process station wherein the
- 4 metrology station comprises an ultraviolet light source illuminating a measurement region of a
- 5 surface.
 - 3. A semiconductor processing device, comprising:
- a wafer process station; and
- a metrology station apart from but coupled to the process station wherein the
- 4 metrology station comprises an ultraviolet light source illuminating a measurement region of a
- 5 surface and at least one spectrograph optically coupled to the measurement region of the
- 6 surface.
- 1 4. A semiconductor processing device, comprising:
- 2 a wafer process station; and

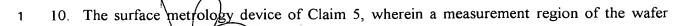
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a metrology station apart from but coupled to the process station wherein the metrology station comprises a wafer support for rotating the wafer with respect to the metrology station.

- 1 5. A surface reflectometer, comprising:
- 2 a light source;
- an objective optic, adapted to translate relative to a wafer surface; and
- 4 at least one light detector
- 1 6. The surface metrology device of Claim 2, wherein the measurement region is wetted by a
- 2 liquid.

1 7. The surface metrology device of Claim 2, wherein the metrology upit comprises optical

- elements that include curved substantially reflective surfaces.
- 1 8. The surface metrology device of Claim 3, wherein the measurement region is wetted by a
- 2 liquid.
- 1 9. The surface metrology device of Claim 4, wherein the measurement region is wetted by a
- 2 liquid.



- 2 surface is wetted by a liquid.
- 1 11. The surface metrology device of Claim 1, further comprising at least one controllable
- 2 translation stage coupled to the metrology unit to change the location of the measurement
- 3 region on the surface.
- 1 12. The surface metrology device of Claim 11, wherein the at least one translation stage is a
- 2 direct drive translation stage.
- 1 13. The surface metrology device of Claim 1, further comprising a rotatable chuck coupled to
- 2 the surface.
- 1 14. The surface metrology device of Claim 1, wherein the surface and metrology unit are
- 2 configured to have 4 degrees of freedom of movement relative to each other.
- 1 15. The surface metrology device of Claim 1, further comprising a second imaging camera
- 2 with a second field of-view.
- 1 16. The surface metrology device of Claim 15, wherein the second field-of-view is smaller
- 2 than the first field of view.

- 1 17. The surface metrology device of Claim 16, wherein the second field-of-view contains the
- 2 measurement region.
- 1 18. The surface metrology device of Claim 1, wherein the metrology unit is a film thickness
- 2 measuring unit.
- 1 19. The surface metrology device of Claim 1, wherein the metrology unit is a surface profile
- 2 measuring unit.
- 1 20. The surface metrology device of Claim 1, wherein the metrology unit is an ellipisometer.
- 1 21. The surface metrology device of Claim 1, wherein the surface is wetted by a liquid.

